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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,796	07/31/2003	Kenji Shimizu	Q71412	9751

23373 7590 12/01/2004  
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EXAMINER

RICKMAN, HOLLY C

ART UNIT PAPER NUMBER

1773

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/630,796

Applicant(s)

SHIMIZU ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-2, 4-12 is/are allowed.
- 6) ☒ Claim(s) 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112.*

1. The rejections of claims 6 and 12 under 35 U.S.C. 112, second paragraph, are withdrawn in view of Applicant's amendments.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. The rejection of claims 1-2, 5-6 and 10-11 under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (US 6524724) in view of Do et al. (US 6537638) is withdrawn in view of Applicant's amendments.
4. The rejection of claim 12 under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (US 6524724) in view of Do et al. (US 6537638) and further in view of Tanahashi et al. (US 6723457) is withdrawn in view of Applicant's amendment.
5. The rejection of claims 1, 4, 7, and 10-11 under 35 U.S.C. 103(a) as being unpatentable over Tomiyasu et al. (US 6670055) in view of Do et al. (US 6537638) is withdrawn in view of Applicant's amendments.

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6. The rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Tomiyasu et al. (US 6670055) in view of Do et al. (US 6537638) and further in view of Cheng et al. (US 6524724) is withdrawn in view of Applicant's amendments.

7. The rejection of claim 12 under 35 U.S.C. 103(a) as being unpatentable over Tomiyasu et al. (US 6670055) in view of Do et al. (US 6537638) and further in view of Tanahashi et al. (US 6723457) is withdrawn in view of Applicant's amendments.

8. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomiyasu et al. (US 6670055) in view of Do et al. (US 6537638).

Tomiyasu et al. disclose a perpendicular magnetic recording medium having a substrate, a seedlayer for controlling the crystal grain diameter of the overlying layers formed from a nonmagnetic material such as CoTi or CoHf, an intermediate layer formed from a CoCr alloy, a magnetic layer formed from a CoPt alloy, and a protective overcoat (col. 4, lines 50-57; col. 6, lines 28-32 and lines 48-56). The reference is silent with respect to the use of a soft magnetic layer between the substrate and the intermediate layer.

Do et al. teach that it is known in the art to add a soft magnetic layer between the substrate and an overlying layer in a perpendicular magnetic recording medium in order to provide a flux return path for the magnetic head for use therewith (col. 3, line 65 to col. 4, line 9).

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It would have been obvious to one of ordinary skill in the art at the time of invention to add a soft magnetic layer to the structure taught by Tomiyasu et al. in order to provide a flux return path for the magnetic field from the read/write head.

With respect to claim 14, the limitation requiring that the amorphous initial growth portion of the intermediate film is less than or equal to 1 nm encompasses an intermediate film having no initial amorphous growth portion (i.e thickness = 0 nm). It is the Examiner's contention that the claim reads on Tomiyasu et al. since Tomiyasu et al. do not teach an initial growth portion.

*Allowable Subject Matter*

9. Claims 1-2 and 4-12 are allowable over the closest prior art to Tomiyasu et al. and Cheng et al. as argued by Applicant.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

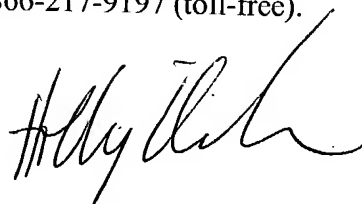
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman  
Primary Examiner  
Art Unit 1773

November 28, 2004